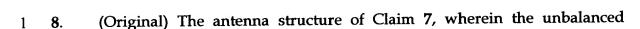
IN THE CLAIMS

1	1.	(Currently amended) An antenna structure comprising:
2		
3		at least one antenna element, the at least one antenna element having at
4		least one taper; and
5		
6		a symmetrical finite ground plane coupled with the at least one antenna
7		element.

- 1 2. (Original) The antenna structure of Claim 1, wherein the at least one
- 2 antenna element comprises a travelling wave antenna supporting a phase
- 3 velocity greater than the speed of light.
- 1 3. (Original) The antenna structure of Claim 1, wherein the taper comprises a
- 2 linear profile, a linear constant profile, a broken-linear profile, an exponential
- 3 profile, an exponential constant profile, a tangential profile, a step-constant
- 4 profile, or a parabolic profile.
- 4. (Original) The antenna structure of Claim 1, wherein the antenna structure
- 2 supports a cigar-like directional three-dimensional beam pattern and a butterfly
- 3 wing-like directional three- dimensional beam pattern.
- 5. (Original) The antenna structure of Claim 1, wherein the at least one
- 2 antenna element is positioned at an angle from the symmetrical ground plane.

- 6. (Currently amended) The antenna structure of Claim 5, wherein the angle
- 2 is about 90 degrees with respect to the x-, y- and z- axes.
- 1 7. (Original) The antenna structure of Claim 1, wherein the at least one
- 2 antenna element is coupled with the symmetrical ground plane by means of an
- 3 unbalanced impedance.



- 2 impedance comprises a coaxial cable.
- 9. (Original) The antenna structure of Claim 7, wherein a first conductor of
- 2 the unbalanced impedance mechanically couples the at least one antenna
- 3 element with the symmetrical ground plane.
- 1 10. (Original) The antenna structure of Claim 1, wherein the symmetrical
- 2 ground plane is disk shaped.
- 1 11. (Currently Amended) An antenna structure comprising:
- an array of at least two antenna elements, each antenna element having at
- 4 least one taper;

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6 a symmetrical <u>finite</u> ground plane; and

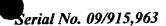
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an unbalanced impedance for coupling the array of at least two antenna elements with the symmetrical ground plane.

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- 1 12. (Original) The antenna structure of Claim 11, wherein at least one antenna
- 2 element of the array comprises a travelling wave antenna supporting a phase
- 3 velocity greater than the speed of light.
- 1 13. (Original) The antenna structure of Claim 11, wherein the taper of at least
- 2 one antenna element of the array comprises a linear profile, a linear constant
- 3 profile, a broken-linear profile, an exponential profile, an exponential constant
- 4 profile, a tangential profile, a step-constant profile, or a parabolic profile.
- 1 14. (Original) The antenna structure of Claim 11, wherein each antenna
- 2 element of the array supports a cigar-like directional three-dimensional beam
- 3 pattern and a butterfly wing-like directional three- dimensional beam pattern.
- 1 15. (Original) The antenna structure of Claim 11, wherein each antenna
- 2 element of the array is positioned at an angle from the symmetrical ground
- 3 plane.

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- 1 16. (Currently amended) The antenna structure of Claim 15, wherein the
- 2 angle for each antenna element is about 90 degrees with respect to the x-, y- and
- 3 **z-** axes.
- 1 17. (Original) The antenna structure of Claim 11, wherein the unbalanced
- 2 impedance comprises a coaxial cable.



- 18. (Original) The antenna structure of Claim 17, wherein a first conductor of
- 2 the unbalanced impedance mechanically couples each antenna element of the
- 3 array with the symmetrical ground plane.
- 1 19. (Original) The antenna structure of Claim 11, wherein the symmetrical
- 2 ground plane is disk shaped.
- 1 21. (Currently Amended) An apparatus comprising:

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3 a transceiver; and

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an antenna structure for radiating or capturing electromagnetic energy from or to the transceiver comprising:

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- at least one antenna element having at least one taper, the taper
- 9 comprising a linear profile, a linear constant profile, a broken-linear
- profile, an exponential profile, an exponential constant profile, a
- tangential profile, a step-constant profile, or a parabolic profile;

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13	a symmetrical disk shaped finite ground plane, the at least one
14	antenna element being positioned at an angle from the symmetrical
15	disk shaped finite ground plane; and
16	
17	an unbalanced impedance for coupling the at least one antenna
18	element with the symmetrical disk shaped finite ground plane.



- 22. (Original) The apparatus of Claim 21, wherein the at least one antenna
 - element supports a cigar-like directional three-dimensional beam pattern and a
- 3 butterfly wing-like directional three- dimensional beam pattern.
- 1 23. (Currently amended) The antenna structure of Claim 21, wherein the
- 2 angle is about 90 degrees with respect to the x-, y- and z- axes.
- 1 24. (Original) The antenna structure of Claim 21, wherein the unbalanced
- 2 impedance comprises a coaxial cable.
- 1 25. (Original) The antenna structure of Claim 21, wherein a first conductor of
- 2 the unbalanced impedance mechanically couples the at least one antenna
- 3 element with the symmetrical ground plane.